

APPENDIX K

Glossary

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APPENDIX K GLOSSARY

Abnormal Event: Unplanned or improper events that result in little or no consequence. Such events are considered to occur in the probability range of 1 to 10^{-3} per year.

Above Ground Level (AGL): Altitude expressed in feet measured above the ground surface.

Accident Potential Zone (APZ): An area defined near a runway where accidents are likely to occur if they occur. APZs are normally 3,000 feet wide and extend 15,000 feet from the end of the runway but can curve with the flight tracks.

Accretion: The buildup of land or accumulation of unconsolidated material within the coastal system caused by wind and wave action, storm surge, or tidal or littoral currents.

Acre-foot: The volume that would cover 1 acre to a depth of 1 foot (43,560 cubic feet).

Activation: The process of making a material radioactive by exposing the material to neutrons, protons, or other nuclear particles.

Activation Products: The radionuclides formed as a result of a material being activated. For example, cobalt-60 (^{60}Co) is an activation product resulting from neutron activation of cobalt-59 (^{59}Co).

Activity: A measure of the rate at which a material is emitting nuclear radiation. Usually, activity is measured in terms of the number of nuclear disintegrations, which occur in a quantity of material over a period of time. The standard unit of activity is the curie (Ci), which is equal to 37 billion (3.7×10^{10}) disintegrations per second.

Agency: Any federal, state, or county government organization participating with jurisdictional responsibilities.

Air Pollutant: One or more contaminants in the air such as dust, fumes, gas, mist, odor, smoke, or vapor in quantities and of characteristics and duration such as to be injurious to human, plant, or animal life or to property, or to interfere unreasonably with the comfortable enjoyment of life and property.

Air Quality: The level of health-related and visible attributes of air (usually pollution). This information is mostly acquired from measurements of specific harmful matter in the air.

Airborne Emissions, Radiological: Radioactivity, in the form of radioactive particles, gases, or both, that is transported by air.

Aircraft Carrier: A warship designed to support and operate aircraft, engage in attacks on targets afloat or ashore, and engage in sustained operations in support of other forces. Designated as CV or CVN: CV is conventional; CVN is nuclear powered.

Alluvial Deposit: Sedimentary matter, such as sand and mud, deposited by flowing water, generally of comparatively recent times.

Alpha Particle: A positively charged particle ejected spontaneously from the nuclei of some radioactive elements. It is identical to a helium nucleus and has a mass number of 4 and an electrostatic charge of +2. It has low penetrating power and a short range (a few centimeters in air).

Ambient (air): Any unconfined portion of the atmosphere: open air, surrounding air.

Ambient Air Quality Standard: As described by regulation, the concentration, in the outdoor air, of air pollutants that may not be exceeded during a specific time in a defined area.

Analysis: The examination of existing and/or recommended management needs and their relationships to discover and display the outputs, benefits, effects, and consequences of initiating a proposed action.

Aquifer: A ground water bearing rock unit (unconsolidated or bedrock) that will yield water in a usable quantity to a well or spring.

Archaeology: The scientific study of the life and culture of past, especially ancient, peoples, as by excavation of ancient cities, relics, artifacts, etc.

Archaeological Site: A discrete location that provides physical evidence of past human use.

Artifact: A manmade object.

Attainment Area: An area that the United States Environmental Protection Agency has designated as being in compliance with one or more of the National Ambient Air Quality Standards for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. An area may be in attainment for some pollutants but not for others.

A-weighted: Weighting function applied to the noise spectrum, which approximates the response of the human ear.

Basin: A depressed area having no surface outlet (*topographic basin*); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (*water*); a depression in the earth's surface, the lowest part often filled by a lake or pond (*lake basin*); a part of a river or canal widened (*drainage, river, stream basin*).

Baseline: The existing environmental conditions against which the impacts of the proposed action and alternatives are assessed. The baseline year for this environmental impact statement is 2006.

Beach: The open, sandy habitat occurring between a body of water and upland areas that is not colonized by marsh or woody vegetation.

Beach Nourishment: The practice of hydraulically pumping clean, sandy sediment onto an eroded beach for the purpose of restoration.

Beneficial Uses: In the context of the dredging project, all productive and positive uses of dredged material, which cover broad use categories ranging from fish and wildlife habitat development, to human recreation, to industrial/commercial uses.

Beneficial Use of Dredged Material: The use of dredged material for some desirable purpose, such as habitat creation, flood protection, or construction of roads or airports.

Best Management Practices: Activities that are added to typical operation, construction, or maintenance efforts that help to protect environmental resources by avoiding or minimizing impacts of an action.

Beta Particle: A negatively charged electron or positively charged positron emitted from a nucleus during decay. Beta decay usually refers to a radioactive transformation of a nuclide by electron emission,

in which the atomic number increases by one and the mass number remains unchanged. In positron emission, the atomic number decreases by one and the mass number remains unchanged.

Beyond Design Basis Accidents: Accidents that are less likely to occur than the design basis accidents, but that may have very large or catastrophic consequences. Accidents included in this range typically have a total probability of occurrence in the range of 10^{-6} to 10^{-7} per year.

Bioaccumulation: The accumulation of contaminants in the tissue of organisms through any route, including respiration, ingestion, or direct contact with contaminated water, sediment, pore water or dredged material. (The regulations require that bioaccumulation be considered as part of the environmental evaluation of dredged material proposed for disposal. This consideration involves predicting whether there will be a cause-and-effect relationship between an organism's presence in the area influenced by the dredged material and an environmentally important elevation of its tissue content or body burden of contaminants above that in similar animals not influenced by the disposal of the dredged material).

Bioassay: A bioassay is a test using a biological system. It involves exposing an organism to a test material and determining a response. There are two major types of bioassays differentiated by response: toxicity tests which measure an effect (e.g., acute toxicity, sublethal/chronic toxicity) and bioaccumulation tests which measure a phenomenon (e.g., the uptake of contaminants into tissues).

Biodiversity: The variety of life and its processes, and the interrelationships within and among various levels of ecological organization. Conservation, protection, and restoration of biological species and genetic diversity are needed to sustain the health of existing biological systems. Federal resource management agencies must examine the implications of management actions and development decisions on regional and local biodiversity.

Bivalves: Two-shelled shellfish such as oysters and scallops (*bivalve mollusks*).

Borrow Material: Soil or sediment taken from a site for use in structure construction, such as sandy sediment dredged and pumped to restore an eroded beach, or clay taken to build a levee or dike.

Bulk Sediment Chemistry: Results of chemical analyses of whole sediments (in terms of wet or dry weight), without normalization (e.g., to organic carbon, grain-size, acid volatile sulfide).

Candidate Species: A species for which the United States Fish and Wildlife Service has sufficient information regarding the biological vulnerability of and threat(s) to that species to warrant a proposal to reclassify it as threatened or endangered (Formerly Category 1 Candidate Species).

Carbon Monoxide: A colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels including gasoline, oil, and wood. Carbon monoxide is also produced from incomplete combustion of many natural and synthetic products.

Carbonate: Contains carbon dioxide.

Characteristic: That which constitutes a character; that which characterizes; a distinguishing trait, feature, or quality; a peculiarity.

Cladding, Fuel: A metal casing that surrounds nuclear fuel.

Clean Air Act: Federal legislation governing air pollution originally enacted in 1970, with significant updates enacted in the 1990 Amendments. The Clean Air Act established National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. These standards represent the maximum levels of background pollution considered safe, with an adequate margin of safety to protect the public health and safety.

Clean Water Act (CWA): Federal legislation governing water quality. The CWA refers to a series of federal laws and regulations that attempt to restore the beneficial uses of surface waters of the United States (also referred to as “waters of the U.S.”). The CWA regulates such programs as the National Pollutant Discharge Elimination System, a permit-based set of regulations that control the discharge of pollution to U.S. waterways from an individual point (for example, the end of a pipe) and the discharge of concentrated storm water from highways, cities, and other built environments. The CWA also regulates the placing of fill in streams and washes for the construction of road crossings, pipelines, and power lines. The United States Environmental Protection Agency and the United States Army Corps of Engineers, which in some cases have extended responsibilities to the individual states, regulate these programs.

Clear Zone (CZ): A CZ is a trapezoidal, fan-shaped area extending 3,000 feet from the end of the runway. Clear zones measure 1,500 feet wide at their base at the end of the runway and 2,284 feet wide at their outer edge.

Coccolithophorid: Microscopic, planktonic marine algae, which secrete a calcite shell. Their remains form chalk deposits, such as the white cliffs of Dover.

Committed Dose Equivalent (CDE): The total radiation dose equivalent to the body or specified part of the body that will be accumulated over 50 years following an intake of radioactive material.

Committed Effective Dose Equivalent (CEDE): The sum of the CDEs to individual tissues resulting from an intake of a radionuclide multiplied by weighting factors that represent the harm to the tissue.

Community (ecological): The living part of an ecosystem. Communities change with succession, thereby forming distinctive ecological units both in time and space. The plant community and the animal community together form the biotic community. Size of area is not implied (i.e., organisms associated with a decaying log or with an entire forest each represent communities).

Composition: The proportions of various plant species in relation to the total on a given area. It may be expressed in terms of cover, density, weight, etc.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal statute that establishes a comprehensive framework to identify, investigate, and clean up releases of hazardous substances into the environment. It provides the statutory authority for clean up of hazardous substances that could endanger public health, public welfare, or the environment (CERCLA, at United States code Sections 9601 *et. seq.*).

Confined Disposal Facility (CDF): A term used to describe a disposal site structure built to hold dredged material in a totally confined condition. Often CDFs are built to permanently hold contaminated sediments.

Contrast: Diversity of adjacent parts, as in color, tone, or emotions. The closer the juxtaposition of two dissimilar perceptions, in time or space, the more powerful the appeal to attention.

Core: The central portion of a nuclear reactor containing the nuclear fuel.

Corrosion Products: The substances produced by corrosion of a metal. Rust is a corrosion product resulting from the corrosion of iron.

Corrosion Resistant Alloy: An alloy that corrodes slowly compared to other metals or alloys. An alloy is a mixture of two or more metals. Stainless steel is an example of a corrosion resistant alloy.

Corrosivity: A characteristic defining a hazardous waste. Solid waste that is defined as corrosive demonstrates the capability to destroy gradually by chemical action.

Council on Environmental Quality (CEQ): The Council is an Executive Office of the President composed of three members appointed by the President, subject to approval by the Senate. Members are to be conscious of and responsive to the scientific, economic, social, aesthetic, and cultural needs of the nation; and to formulate and recommend national policies to promote the improvement of quality of the environment.

Criteria Pollutant: Any pollutant for which the United States Environmental Protection Agency has established a National Ambient Air Quality Standard, specifically carbon monoxide, lead, nitrogen oxides, ozone, particulate matter, and sulfur oxides.

Critical Habitat: Habitat essential to the conservation of an endangered or threatened species that has been designated as critical by the United States Fish and Wildlife Service or the National Marine Fisheries Service.

Crustacean: Major group of animals, including crabs, shrimps, prawns, lobsters, and crayfish; invertebrate organisms whose members have a hard outer skeleton, and occurring in marine and fresh waters and on land; belonging to the phylum Crustacea; aquatic arthropods that typically have a body covered with a hard shell, including lobsters, shrimps, crabs, etc.

Cubic Feet Per Second (cfs): As a rate of stream flow, a cubic foot of water passing a reference section in 1 second of time. One cfs flowing for 24 hours will yield 1.983 acre-feet of water.

Cubic Yard: (cy) A measurement of volume defined by a cube with a side length of one yard.

Cultural Resources: Cultural resources are any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes.

Cumulative Impacts: The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Curie: A unit of radioactivity; the amount of any nuclide that undergoes exactly 3.7×10^{10} radioactive disintegrations per second.

Current: Steady, smooth, onward movement (of water).

Cutterhead: On a hydraulic dredge, the rotating blade on the suction end of the pipeline is called the cutterhead. The cutterhead breaks up material on the bottom of the channel before it is sucked up through the pipe.

Cypresshead Formation: A soil sequence that occurs within the Pliocene. A shallow marine near shore deposit composed of siliciclastics and occurs only in the peninsula of Florida and eastern Georgia. The formation occurs 100 feet above mean sea level (msl).

dBa: A-weighted decibels.

Decapods: Literally ten-feet; crustaceans with ten feet or legs. Prawns and lobsters are decapod crustaceans; while they have paired limbs on all body segments, they have five pairs of main walking and grasping legs. Squid are decapod mollusks as they have ten tentacles.

Decay Product: A nuclide resulting from the radioactive decay of a parent isotope or precursor nuclide.

Decay, Radioactive: The process in which one radionuclide spontaneously transforms into one or more different radionuclides called decay products.

Decibel (dB): Sound is measured by its pressure or energy. The decibel scale is logarithmic; when the scale increases by ten, the perceived sound is two times as loud.

Deployment: The movement of forces within operational areas or the relocation of forces and material to desired operational area; deployment encompasses all activities from origin or home station through destination.

Design Basis Accident Range: Accidents that have a probability of occurrence in the range of 10^{-3} to 10^{-6} per year are included in this range.

Direct Effects: Effects which are caused by the action and occur in the same time and same place.

Disposal Site: Any area, confined or unconfined, that is used for the deposition of dredged material.

Dissolved Oxygen (DO): Oxygen molecules dissolved into bodies of water that are necessary for the respiration of most aquatic organisms. High concentrations of DO are usually present in free-flowing, tumbling water, but can be provided artificially in fish farms by special aerator pumps.

Dolomite: A mineral made up of calcium, magnesium, carbon, and oxygen.

Dolostone: A rock composed primarily of dolomite.

Dose: The quantity of radiation or energy absorbed; usually expressed in rem for doses to man.

Dose Equivalent: A quantity used to express all radiation on a common scale for calculating the effective dose equivalent. It is the number (corrected for background) that is recorded as representing an individual's dose from external radiation sources or internally deposited radioactive materials. It is defined as the product of the absorbed dose and quality factors and is expressed in rem. The dose equivalent quantity is used for comparing the biological effects of different kinds of radiation (based on the quality of radiation and its spatial distribution in the body) on a common scale.

Dose Rate: The amount of radiation dose delivered in a unit amount of time, for example, rem per hour.

Dosimetry: Determination of cumulative radiation dose. Also used to describe devices used to measure the amount of radiation dose.

Dredge: 1) (noun) The machine used to remove, by suction or scooping, sediment from the bottom of a water body. 2) (verb) To remove sediment from the bottom of a water body.

Dredged Material: Any sediment under a body of water which is dredged by any method and displaced or removed to a disposal location.

Dredged Material Disposal Site: The area within which disposal of dredged material occurs.

Dredging Prism: In dredging, the area defined by the top, sides, and bottom of the channel, in which all material is to be removed.

Echinoderms: Marine animals with a five-rayed symmetry, including sea lilies, feather stars, starfish, brittle stars, sea urchins, and sea cucumbers.

Ecosystem: Any area or volume in which there is an exchange of matter and energy between living and nonliving parts; that is, the biotic community together with soil, air, water, and sunlight form an ecosystem. Ecosystems are the best units for studying the flow of energy and matter.

Effective Dose Equivalent (EDE): Quantity obtained by multiplying the dose equivalents to various organs and tissues by factors that reflect the probability of harm to each in relation to all and summing the products.

Elutriate analysis: Involves mixing sediment and site water and testing for the presence of contaminants in the dissolved state. Tests of elutriate illustrate the content of suspended sediment that can result from vessel movements, dredging, or some other form of in-water construction.

Embayment: A shoreline indentation that forms an open bay.

Endangered Species: Plants or animals that are in danger of extinction through all or a significant portion of their ranges. Endangered species are identified by the Secretary of the Interior in accordance with the Endangered Species Act of 1973.

Environmental Impact Statement (EIS): A document prepared to analyze the impacts on the environment of a proposed action and released to the public for review and comment. An EIS must meet the requirements of the National Environmental Policy Act, Council on Environmental Quality, and the directives of the agency responsible for the proposed action.

Environmental Justice: As defined by Executive Order 12898 "*Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*," review must be made as to whether an action causes disproportionately high and adverse environmental or health impacts to minority and/or low-income populations.

Environmental Restoration Program (ERP): Program designed to clean up contamination associated with United States Department of Defense facilities; includes identification, investigation, and clean up of hazardous substances, pollutants, and contaminants as defined by the Comprehensive Environmental Response, Compensation, and Liability Act. The ERP is also known as the Installation Restoration Program.

Eocene (54.8 - 33.7 million years ago): An epoch of the lower Tertiary period. Its name is from the Greek words "eos" (dawn) and "ceno" (new).

Epipelagic: The uppermost, normally photic layer of the ocean between the ocean surface and the thermocline, usually between depths of 0-200 meters; living or feeding on surface waters or at midwater to depths of 200 meters.

Erosion: Detachment or movement of soil or rock fragments by water, wind, or gravity. Accelerated erosion is much more rapid than normal, natural or geologic erosion, primarily as a result of the influence of surface-disturbing activities of people, animals or natural catastrophes.

Erosion Factor K: Indicates the susceptibility of a soil to sheet and rill erosion by water and is one of six factors used to predict the average annual rate of soil loss by such erosion in tons per acre per year. Values of K range from 0.02 to 0.69; higher values correspond to higher susceptibility for erosion.

Estuarine: Living mainly in the lower part of a river or estuary; coastlines where marine and freshwaters meet and mix; waters often brackish (i.e., mixohaline, with salt content 0.5 – 30 percent).

Evaporation: Conversion of water from the liquid phase to the gaseous phase.

Exotic Species: Any non-native species whose introduction does, or is likely to cause, economic or environmental harm or harm to human health; any plant or animal that is not native or indigenous to a region, state, or country. This status can also be applied to native plants that are not native to a particular ecosystem.

Exposure, Background: Exposure to natural ionizing radiation.

Exposure, External: Ionizing radiation originating outside the body.

Exposure, Internal: Ionizing radiation originating inside the body.

Exposure, Occupational: Ionizing radiation incurred during the course of employment.

Exposure, Radiation: The condition of being subject to the effects of or potentially acquiring a dose of radiation. The incidence of radiation on living or inanimate material by accident or intent; subjecting of a material or organism to ionizing radiation.

Fallout: Airborne radioactive particles or dust that fall to ground.

Federal Class I and II Areas: Designated locations in attainment areas where maintenance of existing good air quality is of high priority. Class I areas include the following areas that were in existence as of 7 August 1977: national parks over 6,000 acres, national wilderness areas and national memorial parks over 5,000 acres, and international parks. Class II areas of the country have somewhat less stringent protection from air pollution damage than a Class I area, except in specified cases.

Federal Undertaking: A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency including those carried out by or on behalf of the agency, those carried out with federal financial assistance, those requiring a federal permit license or approval, and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

Fissile: A material whose nucleus is capable of being split (fissioned) by neutrons of all energies.

Fission: The splitting of a heavy nucleus into two approximately equal parts, which is accompanied by the release of a relatively large amount of energy and generally one or more neutrons.

Fission Products: During the operation of a nuclear reactor, heat is produced by the fission (splitting) of “heavy” atoms, such as uranium, plutonium, or thorium. The residue left after splitting of these “heavy” atoms is a series of intermediate weight atoms generally termed “fission products.” Because of the nature of the fission process, many fission products are unstable and, hence, radioactive. Radioactive or nonradioactive atoms produced by the fission of heavy atoms.

Fleet Response Plan (FRP): The Navy adopted the Fleet Response Plan institutionalizing an enhanced naval surge capability. Under the guidance of U.S. Fleet Forces Command, the fleet training cycle has been adjusted with refined maintenance, modernization, manning, and training processes to enable the fleet to consistently sustain a level of at least six surge capable carrier strike groups available within 30 days, and one additional strike group able to deploy within 90 days of an emergency order.

Floodplain: Lowland or flat area adjoining inland and coastal waters, including areas on offshore islands that are prone to flooding.

Fossiliferous: Fossil-containing.

Fugitive Dust: Airborne particles emitted from any source other than through a stack or vent.

Fuel: Fissionable material used or reusable to produce energy in a nuclear reactor.

Game Species: Any species of wildlife or fish that is managed for hunting.

Gamma Ray: High energy, short wavelength electromagnetic radiation. Gamma rays are very penetrating and are stopped most effectively by dense materials such as concrete or lead. They are similar to x-rays, but are usually more energetic. Cobalt-60 (^{60}Co) is an example of a radionuclide that emits gamma rays.

Gastropods: Literally 'stomach-foot'; a large group of mollusks including the snails.

Gaussian Model: A pollutant diffusion model based on an assumption of stationary, homogenous turbulent flow. The distribution of material in a plume or puff is assumed to be gaussian (normal) shaped.

GENII: A computer code used for environmental transport and exposure assessment calculations for normal operations and surface water transport and exposure for accident scenarios

Geographic Information System (GIS): GIS is a system of hardware and software used for storage, retrieval, mapping, and analysis of geographic data. Spatial features are stored in a coordinate system (latitude and longitude, state plane, Universal Transverse Mercator, etc.), which references a particular place on the earth. Descriptive attributes (e.g., solid type) in tabular form are associated with spatial features. Spatial data and associated attributes in the same coordinate system can then be layered together for mapping and analysis. The data can also be used to create charts, maps, and 3-dimensional models of the earth's surface.

Groundwater: Water below the ground surface in a zone of saturation.

Habitat: A specific set of physical conditions in a geographic area(s) that surrounds a single species, a group of species, or a large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

Habitat Fragmentation: The disruption (by division) of extensive habitats into smaller habitat patches. The effects of habitat fragmentation include loss of habitat area and the creation of smaller, more isolated patches of remaining habitat.

Half-life, Radiological: The time required for half of the atoms of a radioactive material to decay to another nuclear form. Half-lives range from millionths of a second to billions of years depending on the stability of the nuclei.

Hazardous Material: Substances or mixtures of substances that have the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or posing a substantial present or potential risk to human health or the environment. In order to be classified as hazardous, the substance must either appear on a series of lists compiled by the United States Environmental Protection Agency or demonstrate the characteristics of ignitability, corrosivity, reactivity, or toxicity.

Hazardous Waste: Hazardous wastes are products or by-products of hazardous materials. A waste is hazardous if it exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity. The Resource Conservation and Recovery Act defines hazardous wastes as wastes or combination of wastes that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Heavy metals: Metals which have been proven to be hazardous to living organisms ingesting them in sufficient quantities; generally, cadmium, nickel, lead, zinc, copper, mercury, chromium, and others.

Holocene: Period of time that began 10,000 years ago and continues today.

Homeporting: To base a ship permanently in a given port. In Navy terms, homeporting includes the assignment of the ship and its crew to the port. Following operational deployments, the ship and its crew returns to its homeport. Homeports need to have adequate infrastructure to perform routine and depot-level maintenance.

Hopper Dredge: A hydraulic dredge that stores dredged material in large bins, or *hoppers*, inside the hull of the dredge and then transports it to the disposal area.

Hydraulic dredge: A dredge that digs material by mixing it with water and sucking it from the bottom.

Hydraulic pipeline: A dredged material discharge pipeline that carries slurry material from the dredging site to the disposal site. It may be floating or positioned on land, and may be movable or stationary.

Hydrographic surveying: Measuring the depth and mapping the bottom of lakes, rivers, or oceans.

Indirect Effects: Effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Indirect Economic Impacts: As defined in the IMPLAN model, changes in purchases made between industries as they respond to the new demands of the directly affected industry.

Induced Economic Impacts: As defined in the IMPLAN model, typically reflects changes in spending from households as income increases or decreases due to the changes in the directly affected industry.

Intertidal zone: That land area between mean low water and mean high water that is inundated periodically by tides.

Ion: An atom or molecule that has acquired an electrical charge by gaining or losing electrons.

Ionizing Radiation: Any radiation that displaces electrons from atoms or molecules, thereby producing ions. Examples include alpha, beta, and gamma radiation. Exposure to ionizing radiation may produce tissue damage.

Irradiate: To expose to radiation.

Isotope: One of two or more nuclides, which have the same number of protons but have different numbers of neutrons in their nuclei. Isotopes usually have very nearly the same chemical properties but somewhat different physics.

Jurisdictional wetland: A wetland that meets all three United States Army Corps of Engineer criteria for jurisdictional status: appropriate hydrologic regime, hydric soils, and facultative to obligate wetland plant communities under normal growing conditions.

Kilowatt hour: The consumption of one kilowatt of power over one hour.

Latent Cancer Fatality: A cancer caused death that results from exposure to ionizing radiation. There typically is a latent period between the time of the radiation exposure and the time the cancer becomes active.

Latent Period: The period between the time of the exposure to an agent and the beginning of the response. The incubation period of a disease.

Limestone: A rock consisting mainly of calcium.

Longshore sediment transport: The displacement of sediments within the surf zone, directed parallel to the coast; among the most important near shore processes that control beach morphology and determines in large part shore erosion, accretion, or stability.

Low-Income Populations: Defined in terms of Bureau of the Census annual statistical poverty levels (Current Population Reports, Series P-60 on Income and Poverty), may consist of groups or individuals who live in geographic proximity to one another or who are geographically dispersed or transient (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

Macroinvertebrates: Invertebrates (animals without a backbone) that live on the bottom of water bodies during all or part of their life cycle.

Maintenance Dredging: The cyclic dredging of the same area over a period of time to remove accumulating sediments and to maintain ship and barge traffic.

Malacostracan: The class of crustaceans that include the shrimps, crabs, and lobsters.

Maximally Exposed Individual (MOI): A theoretical individual living at the naval base boundary receiving the maximum radiation exposure. For the purposes of dose calculation, it is assumed this individual is not evacuated during or after a radiological accident.

Mean High Water (MHW): Mean high water is the highest level of inundation under normal conditions to which the tide flows over the land.

Mean Sea Level (MSL): Altitude or elevation expressed in feet above the average mean sea level. For example, a field elevation of 26 feet above mean sea level would be expressed as “26 ft MSL” and an aircraft altitude of 1,200 feet above mean sea level would be expressed as “1,200 ft MSL.”

Megavolts-Ampere (MVA): A measure of electrical capacity calculated by multiplying the voltage rating of a piece of equipment by its current rating.

Megawatt: One hundred kilowatts.

Millirem: A unit of measuring dose equivalents, which is equal to one-thousandth of a rem.

Minority Populations: Minority populations exist where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than in the general population or other appropriate unit of geographic analysis (such as a governing body’s jurisdiction, a neighborhood, census tract, or other similar unit). “Minority” refers to individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Minority populations include either a single minority group or the total of all minority persons in the affected area. They may consist of groups of individuals living in geographic proximity to one another or a geographically dispersed/transient set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

Mitigation: Measures taken to minimize adverse environmental impacts. Mitigation could reduce the magnitude and extent of an impact from a level of significance to a level of insignificance. Mitigation includes:

- Avoidance - Avoid the impact by changing the action. Do not take certain actions that would cause the environmental effect.
- Minimization - Minimize impacts by changing the intensity, timing, magnitude, or duration of the action and its implementation.
- Rectifying - Rehabilitate, repair, or restore damage that may be caused by implementing the proposed action.
- Reducing/Eliminating - Reduce or eliminate the impact over time.
- Replacement - Compensation for the impact by replacing the damage by improving the environment elsewhere or by providing other substitute resources such as funds to pay for the environmental impact.

Mollusks: Invertebrate animals belonging to the phylum Mollusca that includes the snail, clams, chitons, tooth shells, and octopi.

Mucky Peat: A soil consisting of primarily organic matter.

Nashua Formation: A soil sequence that occurs within the Pliocene and sediments form part of the surficial aquifer system.

National Ambient Air Quality Standards (NAAQS): The permissible levels of criteria air pollutants established to protect public health and welfare.

National Environmental Policy Act of 1969 (NEPA): An Act that encourages productive and enjoyable harmony between man and his environment and promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation, and established the Council on Environmental Quality. The Act directs federal agencies to take environmental factors into consideration in their decisions and to involve the public in their decision-making process.

National Historic Landmark (NHL): NHLs are places that “possess exceptional value or quality in illustrating and interpreting the heritage of the United States” and include battlefields, architectural or engineering masterpieces, ruins, and historic towns and communities.

National Historical Preservation Act (NHPA): The NHPA of 1966, as amended, established a program for the preservation of historic properties throughout the United States.

National Pollutant Discharge Elimination System (NPDES): The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing permits, and imposing enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act. The Clean Water Act prohibits anybody from discharging “pollutants” through a “point source” into a “water of the United States” unless they have an NPDES permit.

National Register of Historic Places (National Register): The official list of the Nation’s cultural resources that are worthy of preservation. The National Park Service maintains the list under direction of the Secretary of the Interior. Buildings, structures, objects, sites, and districts are included in the National Register for their importance in American history, architecture, archaeology, culture, or engineering. Properties included on the National Register range from large-scale, monumentally proportioned buildings to smaller scale, regionally distinctive buildings. The listed properties are not just of nationwide importance; most are significant primarily at the state or local level.

Native Species: With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

Natural Background Radiation Exposure: The total amount of radiation exposure from cosmic radiation and radiation emitted by naturally occurring radioisotopes. Typically, an average annual exposure of 295 millirem to the total body occurs from background radiation.

Nautical Mile (nm): A distance unit equal to 1.14 statute miles.

Naval Nuclear Propulsion Program: A joint program of the Department of Energy and the Department of the Navy that has as its objective the design and development of improved U.S. Navy nuclear

propulsion plants having high reliability, maximum simplicity, and optimum fuel life for installation in ships ranging in size from small submarines to large combatant surface ships.

Nearest Public Access Individual (NPA): Military personnel, civilian employees, or their family members, including some who reside on the base and may be exposed to radioactivity as a result of a radiological accident. These individuals may be located outside the controlled industrial area boundary but inside the confines of the military base.

Neutron: An uncharged particle with a mass slightly greater than that of a proton, found in the nucleus of every atom heavier than hydrogen. Neutrons sustain the fission chain reaction in a nuclear reactor. A neutron is frequently released as radiation.

Nitrogen Dioxide (NO₂): A gas consisting of one nitrogen and two oxygen atoms. It absorbs blue light and therefore has a reddish-brown color associated with it.

Non-Attainment Area: An area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) any of the federal primary or secondary ambient air quality standards for the pollutant.

Noxious Weeds: Plant species that have been legally designated as unwanted or undesirable. This includes national, state and county or local designations. According to the Federal Noxious Weed Law, native plant species are not designated “noxious.” Native plant species that may be of a management concern, such as poisonous plants or desert shrub and suburb species are not considered priorities for noxious weed work or funding.

Nuclear Radiation: Energy that is emitted from atomic nuclei in various nuclear reactions and includes alpha, beta, and gamma radiation, and neutrons.

Nuclide: An atomic form of an element, which is distinguished by its atomic number, atomic weight, and the energy state of its nucleus. These factors determine the other properties of the element, including its radioactivity.

Nutrient Load: The level of nutrients, primarily nitrogen, phosphorus, and potassium, in soil or dredged material usually caused by agricultural runoff from fertilized fields. Excess nutrient loads can occasionally cause detrimental effects in disposal sites, especially in ponded areas.

Ocean Dredged Material Disposal Site (ODMDS): A site in the ocean designated by the United States Army Corps of Engineers as a disposal site for dredged material.

Ocean Dumping: The practice of dredged material disposal via oceangoing barge into a designated disposal site in deep, open water, often miles from shore.

Operating Area: An at-sea Operating Area is an area where military training exercises and system qualification tests are routinely conducted.

Ozone (O₃): A form of oxygen containing 3 molecules, usually found in the stratosphere (upper atmosphere), and responsible for filtering out much of the sun's ultraviolet radiation. In the troposphere (lower atmosphere), it is a chemical oxidant, a greenhouse gas, and a major component of photochemical smog.

Particulate: Pertaining to a very small piece or part of material.

Particulate Matter: Includes dusts, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by construction, industrial processes such as steel making, mining operations, agricultural burning (field and slash burning), and operation of fireplaces and woodstoves.

Panaeid Shrimp: Shrimp in the family Penaeidae including most of the commercially fished species.

Pathway: The route or course along which radionuclides could reach man.

pH: A number used by chemists to express the acidity of solutions, including water. A pH value lower than 7 indicates an acidic solution, a value of 7 is neutral, and a value of higher than 7 indicates an alkaline solution. Most ground waters in the United States have pH values ranging from about 6.0 to 8.5.

Phosphatic: Phosphate containing.

Pliocene: Period beginning 18 million years ago and ending 10,000 years ago.

Pleistocene: Period beginning two million years ago and ending 10,000 years ago.

PM_{2.5}: A criteria air pollutant that is particulate matter in ambient air exceeding 2.5 microns in diameter.

PM₁₀: A criteria air pollutant that is particulate matter in ambient air exceeding 10 microns in diameter.

Polychaete: Group of chiefly marine annelid worms armed with setae or bristles extending from most body segments.

Polychlorinated Biphenyls (PCBs): Synthetic organic compounds that can accumulate in the bodies of fish and other organisms and cause death with enough exposure.

Polycyclic Aromatic Hydrocarbon (PAH): Any of a class of organic molecules that consist of three or more benzene rings and are commonly produced by fossil fuel combustion.

Population Dose: A summation of the radiation doses received by individuals in an exposed population; equivalent to collective dose; expressed in person-rem.

Potable Water: Water that is suitable for drinking.

Probability: The relative frequency at which an event can occur in a defined period. Statistical probability is what happens in the real world and can be verified by observation or sampling. Knowing the exact probability of an event is usually limited by the inability to know, or compile the complete set of all possible outcomes over time or space. Probability is measured on a scale of 0 (event will not occur) to 1 (event will occur).

Proton: An elementary particle that is the positively charged component of ordinary matter and, together with the neutron, is the building block of all atomic nuclei.

Rad: A unit of absorbed radiation dose in terms of energy. One rad equals 100 ergs of energy absorbed per gram of tissue.

Radiation: The emission and propagation of energy through matter or space by means of electromagnetic disturbances, which display both wave-like and particle-like behavior. In this context, the "particles" are known as photons. The term has been extended to include streams of fast moving particles such as alpha

and beta particles, free neutrons, and cosmic radiations. Nuclear radiation is that which is emitted from atomic nuclei in various nuclear reactions and includes alpha, beta, and gamma radiation and neutrons. Some elements are naturally radioactive; others are induced to become radioactive by irradiation in a reactor. Naturally occurring radiation is indistinguishable from induced radiation.

Radiation Level: The measured amount of radiation in a region.

Radiation Shielding: Materials that are used to reduce radiation levels from a radioactive source.

Radiation Survey: The evaluation of an area or object with instruments to detect, identify and quantify radioactive materials and radiation fields, which may be present.

Radiation Worker: A person qualified to work in radiation areas through training in radiation, its effects, and radiological control techniques and practices.

Radioactive: Emitting radioactivity.

Radioactive Contamination: The deposition of radioactive material on any surface.

Radioactive Contamination Containment: Devices as complex as a glove box or as simple as a plastic bag designed to limit the spread of radioactive contamination to an area as close as possible to the source and to prevent contaminating other material.

Radioactive Decay: The process of spontaneous transformation of a radioactive nuclide to a different energy state of the same nuclide. Radioactive decay involves the emission of alpha particles, beta particles, or gamma rays from the nuclei of the atoms. If a radioactive nuclide is transformed to a stable nuclide, the process results in a decrease in the number of original radioactive atoms. Radioactive decay is also referred to as radioactive disintegration.

Radioactive Waste: Equipment and materials that are radioactive and for which there is no further use.

Radioactivity: The property possessed by some elements (for example, uranium) of spontaneously emitting alpha, beta, or gamma rays by the disintegration of atomic nuclei. The process of spontaneous decay or disintegration of an unstable nucleus of an atom; usually accompanied by the emission of ionizing radiation.

Radiological Consequences: The changes to the environment or to the health of a person(s) as a consequential result of the effects of radiation exposure or radioactive materials.

Radionuclides: Atoms that exhibit radioactive properties. Standard practice for naming radionuclides is to use the number or atomic symbol followed by its atomic weight (e.g., cobalt-60 or ⁶⁰Co).

Reactor Vessel: A very strong, thick walled steel structure, which contains the nuclear fuel and cooling water under high pressure during reactor operations.

Region of Influence (ROI): Area within which effects from the proposed action are anticipated to occur. The ROI varies from resource to resource with some effects limited within the boundaries of the project while others are expected to go beyond the boundaries of the project area.

Rem: A unit of measurement used to indicate the amount of radiation exposure a person receives (an acronym for roentgen equivalent man). A unit of dose equivalent. The rem is specific to the biological effectiveness of radiation exposure.

Resource Conservation and Recovery Act (RCRA): RCRA was enacted in 1976 to address the issue of how to safely manage and dispose of the huge volumes of municipal and industrial waste generated nationwide. Specifically, the RCRA program regulates solid waste recycling and disposal; federal procurement of products containing recycled materials; waste minimization; hazardous waste generators and transporters; hazardous waste treatment, storage and disposal facilities (TSDFs); and underground storage tanks (USTs). (RCRA, at United States Code Sections 6901 *et. seq.*)

Risk: The product of the probability that an undesirable event will occur and the consequences of the undesirable event.

RSAC-6: A computer code used to calculate the consequences of the release of radionuclides to the atmosphere. It also calculates potential radiation exposures via inhalation, ingestion, exposure to radionuclides deposited on the ground surface, immersion in airborne radioactive material, and radiation from a cloud of radioactive material.

Sand: That fraction of soil or dredged material whose grain size distribution is 2.00 to 0.05 millimeters, generally referred to as coarse grained.

Saturated: When referring to soil, the maximum amount of water that can be held either when the soil is frozen or the spaces between the soil particles are filled with water. Any additional seepage over saturated soil will result in runoff.

Scale: The proportionate size relationship between an object and the surrounding in which it is placed.

Scoping: An early and open public involvement process for identifying and determining the scope of issues to be addressed in an environmental planning document, including proposed alternatives and significant issues related to a proposed action.

Sediment: Any soil material that has washed or blown into a body of water and settled to the floor to become a part of the substrate.

Sedimentation: The process of deposition of sediment in water through settling out of heavier coarse-grained particles. This term also refers to the deposition of alluvial sediment in a floodplain at river flood stage.

Shoal: 1) (noun) A shallow area in a waterway caused by the deposition of sediment. 2) (verb) To become shallow due to the deposition of sediment.

Significant Impact: According to 40 CFR 1508.27, “significantly” as used in NEPA requires consideration of both context and intensity:

- Context - This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

- Intensity - This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
 1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.
 2. The degree to which the proposed action affects public health or safety.
 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
 4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
 5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
 6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
 7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
 8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
 9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
 10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

Siliciclastic: Rocks that are almost exclusively silica-bearing.

Silt: The fraction of soil or dredged material whose grain size distribution is 0.05 to 0.002 millimeters, generally referred to as fine grained.

Slurry: A term describing the mixture of soil or sediment and water hydraulically dredged and pumped to a disposal site.

Special Status Species: Plant or animal species listed as threatened, endangered, candidate or sensitive by state governments or the federal government.

Stability Class: A measure of the state of atmospheric turbulence conditions.

State Historic Preservation Officer (SHPO): The official, appointed or designated, pursuant to Section 101(b)(1) of the National Historic Preservation Act of 1966, as amended, charged with administering the State Historic Preservation Program.

Sulfur Dioxide (SO₂): A gas produced by burning coal, most notably in power plants. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide is closely related to sulfuric acid, a strong acid. Sulfur dioxide plays an important role in the production of acid rain.

Surface Disturbance: The physical disturbance, which alters the structure and composition of vegetation and topsoil/subsoil.

Surface Water: All bodies of water on the surface of the earth and open to the atmosphere, such as rivers, lakes, reservoirs, ponds, seas, and estuaries.

Surficial Deposits: Deposits that occur on or near the surface of the earth.

Suspended Solids: Soil particles and organic matter which remain suspended in the water column after agitation from dredging, or during movement downstream in river systems.

Threatened Species: Any animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. These species are listed by the Secretary of the Interior.

Total Dissolved Solids (TDS): The total quantity (reported in milligrams per liter) of dissolved materials in water.

Toxicity: A characteristic defining a hazardous waste. Toxicity refers to the ability of a material to produce injury or disease through exposure, ingestion, inhalation, and assimilation by a living organism.

Trend: The direction of change over time, either toward or away from desired management objectives.

Turbidity: A condition in bodies of water where high sediment loads cause clouding of the water to varying extents. In the case of feeding animals, turbidity limits visual feeding. It also will shade out or smother aquatic vegetation.

Unconfined Disposal Site: Any dredged material disposal site where the material is not placed behind a retaining structure but is allowed to flow freely out of the disposal site.

Uplands: Land at a higher elevation than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

Vibracore Sampling: Vibracore sampling is a method of retrieving undisturbed samples in marine environments to evaluate sub-bottom sediments. The vibracore equipment consists of a vibrating motor to which a hollow casing is attached that slides down a beam of a predetermined length. The apparatus is typically launched over the water surface by a crane mounted on a barge vessel and placed in a vertical

position. The sampling is then conducted as the vibration begins. The vibration is of low amplitude and high frequency that liquefies sediments that are then collected in the hollow casing's liner. When complete, the sampling device is lifted back on the barge and the sample is extracted.

Volatile Organic Compounds (VOCs): VOCs are a principal component in atmospheric reactions that form ozone and other photochemical oxidants. VOCs are emitted from diverse sources, including automobiles, chemical manufacturing facilities, drycleaners, paint shops and other commercial and residential sources that use solvent and paint. The term volatile organic compound is defined in federal rules as a chemical that participates in forming ozone.

Water Quality: The chemical, physical, and biological characteristics of water with respect to its suitability for a particular purpose.

Water Quality Certification: A state certification, pursuant to Section 401 of the Clean Water Act, that the proposed discharge of dredged material will comply with the applicable provisions of Sections 301, 303, 306 and 307 of the Clean Water Act and relevant state laws. Typically this certification is provided by the affected state. In instances where the state lacks jurisdiction (e.g., Tribal Lands), such certification is provided by the United States Environmental Protection Agency or the Tribe (with an approved certification program).

Water Quality Standard: A law or regulation that consists of the beneficial designated use or uses of a water body, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular water body, and an anti-degradation statement.

Water Table: The surface in a groundwater body where the water pressure is atmospheric. It is the level at which water stands in a well that penetrates the water body just far enough to hold standing water.

Watershed: The land area that drains water to a particular stream, river, or lake. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge.

Wetlands: Those areas that are inundated by surface or groundwater with a frequency sufficient to support, and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas (e.g., slough potholes, wet meadows, river overflow areas, mudflats, and natural ponds).

Wind Erodibility Group: Established for soils that have similar properties affecting their susceptibility to wind erosion; soils assigned to group 1 are the most susceptible to wind erosion and those assigned to group 8 are least susceptible.

X-rays: Penetrating electromagnetic radiations with wavelengths shorter than those of visible length. They are usually produced (as in medical diagnostic x-ray machines) by irradiating a metallic target with large numbers of high-energy electrons. They are essentially similar to gamma rays, but are usually less energetic and originate outside the nucleus.